

1 ABSTRACT OF THE DISCLOSURE

2 A projection exposure apparatus has an
3 illumination optical system for illuminating a mask, on
4 which a predetermined pattern is formed, with light
5 from a light source, a projection optical system for
6 forming an image of the pattern of the mask on a
7 photosensitive substrate, a mask stage for holding the
8 mask and moving the mask within a plane perpendicular
9 to the optical axis of the projection optical system, a
10 substrate stage for moving the photosensitive substrate
11 within a plane conjugate to the plane with respect to
12 the projection optical system, and an imaging
13 characteristic correction system for correcting an
14 imaging characteristic of the projection optical
15 system. The apparatus synchronously moves the mask and
16 the photosensitive substrate along the optical axis of
17 the projection optical system so as to expose the
18 entire pattern surface of the mask. The apparatus
19 includes an incident light intensity input system for
20 inputting the intensity of the illumination light,
21 which is incident on the projection optical system
22 through the mask, in accordance with the position of
23 the mask, and an imaging characteristic calculation
24 device for calculating a variation in imaging
25 characteristic of the projection optical system on the
basis of information from the incident light intensity
input system. The imaging characteristic correction

1 system is controlled on the basis of a result obtained
by the imaging characteristic calculation device.

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